

Claims:

1. A method of writing data to a tape storage medium comprising (a) temporarily storing the data, (b) selectively compressing the data prior to temporarily storing the data, the selective compressing being a function of the amount of data being temporarily stored, and (c) writing data temporarily stored during step (a) to the tape.
2. The method of claim 1 further including effectively varying the rate at which temporarily stored data are written to the tape.
3. The method of claim 1 further including effectively varying the rate at which temporarily stored data are written to the tape as a function of the rate at which the data is applied to an apparatus for performing the step (b).
4. The method of claim 1 further including effectively varying the rate at which temporarily stored data are written to the tape by varying the speed of the tape.
5. The method of claim 4 wherein the speed of the tape is varied as a function of the rate at which the data is applied to an apparatus for performing the step (b).
6. The method of claim 4 wherein the speed of the tape is varied as a function of the amount of data being temporarily stored.
7. The method of claim 1 wherein the data is applied in bursts to apparatus for performing step (b) and step (c) is performed continuously as long as data is temporarily stored.
8. The method of claim 7 wherein all the data in a burst is compressed in the same way.

9. The method of claim 1 wherein step (b) includes compressing the data only in response to the amount of data being temporarily stored exceeding a predetermined amount.

10. Apparatus for performing steps (a) and (b) of claim 1.

11. Apparatus for performing the method of claim 1.

12. Apparatus for performing the method of claim 2.

13. Apparatus for performing the method of claim 3.

14. Apparatus for performing the method of claim 4.

15. Apparatus for performing the method of claim 5.

16. Apparatus for performing the method of claim 7.

17. Apparatus for performing the method of claim 8.

18. Apparatus for performing the method of claim 9.

19. The apparatus of claim 10 wherein the apparatus for performing step (a) includes a buffer memory.

20. The apparatus of claim 19 wherein the apparatus for performing step (b) includes a data compressor having an output for coupling data compressed thereby to the buffer memory.

21. The apparatus of claim 10 wherein the apparatus for performing step (b) includes a data compressor having an output for coupling data compressed thereby to a data storage device for performing step (a).

22. A tape drive unit comprising:
a data compressor capable of applying compression to an incoming data stream;
a buffer memory capable of storing data of said incoming data stream;
a monitoring element capable of monitoring a data occupancy level of said buffer memory; and
a control element capable of enabling or disabling said data compression engine;
said control element being operable to disable said data compression engine in response to said data occupancy level of said buffer memory being below a predetermined level.

23. The tape drive unit as claimed in claim 22, comprising:
a tape transport mechanism for transporting a tape data storage medium past a transducer;
wherein said tape transport mechanism is operable to continue streaming of said tape, whilst said data compression engine is in an enabled mode, and whilst said compression engine is in a disabled mode.

24. The tape drive unit as claimed in claim 22, comprising:
a tape transport mechanism for transporting a tape data storage medium past a transducer; and
a tape speed control element for controlling said tape transport mechanism for transporting said tape at a variable speed:
said tape speed being variable according to a data occupancy level of said buffer memory.

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25. A data processing device comprising:

a data compressor capable of applying compression to an incoming data stream;

a buffer memory capable of storing data of said incoming data stream;

said device being operable to disable said data compression engine in response to a data occupancy level of said buffer memory being below a predetermined level.

26. The data processing device as claimed in claim 25, further comprising:

a monitoring element capable of monitoring data occupancy level of said buffer memory; and

a control element capable of enabling or disabling said data compression engine in response to an indication of monitored data occupancy level of said buffer memory derived by the monitoring elements.

27. A data processing device comprising:

means for applying compression to an incoming data stream; and

means for storing data of said incoming data stream;

said data processing device being operable to disable the data compression means in response to a data occupancy level of said means for storing data being below a predetermined level.

28. A data processing device comprising:

a data compressor capable of applying compression to a data stream received by said device; and

a buffer memory capable of storing data of said received data stream;

said device being operable for causing said compressor (a) to apply compression processing to said received data stream in response to the amount of data in said buffer memory being at a relatively high value, and (b) to be inactive for causing said received data stream to be coupled to said buffer

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memory without being compression processed by said compressor, in response to the amount of data in said buffer memory being at a relatively low value.

29. A memory storing program instructions for causing a data processor to:

monitor a data occupancy level of a buffer memory; and

disable a data compressor in response to said data occupancy level of said buffer memory being below a predetermined level.

30. A memory storing program instructions for controlling a processor to apply data processing to an incoming data stream, said program code comprising:

a monitoring module capable of causing the processor to monitor a data occupancy level of a buffer memory; and

a control module capable of enabling or disabling a data compressor;

said control module being operable to send a signal for disabling said data compressor in response to said data occupancy level of said buffer memory being below a predetermined level.

31. A method of writing data to a tape data storage medium, said method comprising:

supplying a stream of the data to a buffer memory; and

compressing said data stream upstream of said buffer memory in response to the data occupancy level of said buffer memory being at or above a threshold level.

32. The method of claim 31, further comprising:

inputting said data stream directly into said buffer, without applying any compression, in response to said data occupancy level being below said threshold level.

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33. A method of writing data to a tape data storage medium, said method comprising:

- supplying bursts of data of a data stream to a buffer memory at a first data rate;

- transferring data of said data stream from said buffer memory to said tape data storage medium at a second data rate;

- monitoring the data occupancy level of said buffer memory;

- depending upon the value of said data occupancy level, varying the speed of said tape data storage medium relative to a transducer; and

- depending upon the value of said data occupancy level, activating or deactivating a data compressor connected up stream of said buffer memory, the compressor selectively compressing data of said host data stream prior to entry of data from the host data stream into said buffer memory.

34. A method of controlling a data rate of data exiting a buffer memory, said method comprising:

- receiving a data stream at a first data rate:

- selectively applying or not applying compression to said data stream to produce a compression processed data stream;

- coupling said selectively compression processed data stream to a buffer memory; and

- outputting said selectively compression processed data stream as an output of said buffer memory at a second data rate;

- said process of selectively applying compression to said data stream comprising:

- applying a compression algorithm to said data stream in response to a data occupancy level of said buffer memory being at or above a predetermined threshold limit; and

- disabling application of said compression algorithm to said data stream, in response to a data occupancy level of said buffer memory falling below said predetermined threshold limit.

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35. The method as claimed in claim 34 further including writing said output of said buffer memory at said second data rate to a tape data storage medium.

36. A method of data processing a stream of data comprising:
coupling data of said data stream to a buffer memory;
applying compression processing to said data stream in response to the amount of data in said buffer memory being relatively high; and
coupling said data stream to said buffer memory without compression processing said data stream in response to the amount of data in said buffer memory being relatively low.